

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A deposition method comprising the steps of:
providing a substrate comprising an active substrate comprising at least one material selected from the group consisting of a metal, metal alloy, and metal containing compound;
contacting the substrate with a non-aqueous organic solution comprising a desired deposition galvanic coating component, the desired deposition galvanic coating component having a more noble composition than the less noble composition of the active substrate; and
spontaneously displacing the active substrate with the desired deposition galvanic coating component and creating seed particles disposed on the substrate in a localized range, the seed particles comprising an activating species; and
continuing plating the desired deposition galvanic coating component from the non-aqueous organic solution onto the activated substrate and seed sites.
2. (cancelled)
3. (previously presented) The method of claim 1 wherein the desired deposition component comprises a seed composition comprising a material selected from the group consisting of copper, platinum, palladium, gold, zinc, iron, cadmium, silver, lead, cobalt, nickel, and mixtures thereof.
4. (previously presented) The method of claim 1 wherein the desired deposition component comprises a metal.
5. (previously presented) The method of claim 4 wherein the desired deposition component comprises a material selected from the group consisting of copper, gold, platinum, palladium, silver, lead, zinc, tin, nickel, iron, and mixtures thereof.
6. (cancelled)
7. (cancelled)
8. (cancelled)

9. (previously presented) The method of claim 1 wherein the substrate comprises at least one material selected from the group consisting of tungsten-based, tantalum-based, and titanium-based materials.

10. (previously presented) The method of claim 9 wherein said substrate comprises at least one material selected from the group consisting of Ti, Ta, W, TiN, TaN, W₂N, TiSiN, WN, WSiN and TaSiN.

11. (previously presented) The method of claim 1 wherein the active substrate comprises at least one material selected from the group consisting of copper, nickel, iron, aluminum, steel, zinc and silver.

12. (cancelled)

13. (previously presented) The method of claim 1 wherein the organic solution comprises at least two deposition components.

14. (previously presented) The method of claim 1 wherein the substrate comprises a barrier layer.

15. (previously presented) The method of claim 1 further comprising the step of treating the substrate.

16. (previously presented) The method of claim 15 wherein the treating step comprises introducing a halogenated compound into the organic solution.

17. (previously presented) The method of claim 16 wherein the halogenated compound comprises at least one material selected from the group consisting of HBF₄, HF, NaF, H₂SiF₆, and HCl.

18. (previously presented) The method of claim 15 wherein the treating step comprises introducing a non-halogenated compound into the organic solution.

19. (original) The method of claim 18 wherein the non-halogenated compound comprises H₂SO₄.

20. (cancelled)

- 21. (cancelled)
- 22. (cancelled)
- 23. (cancelled)
- 24. (cancelled)
- 25. (cancelled)
- 26. (cancelled)
- 27. (previously presented) The method of claim 1 wherein the organic solution comprises a cation exchange reactant.
- 28. (cancelled)
- 29. (cancelled)
- 30. (cancelled)
- 31. (cancelled)
- 32. (cancelled)
- 33. (cancelled)
- 34. (cancelled)
- 35. (cancelled)
- 36. (cancelled)
- 37. (cancelled)

38. (cancelled)

39. (cancelled)

40. (cancelled)

41. (cancelled)

42. (cancelled)

43. (cancelled)

44. (Original) The method of claim 1 further comprising the step of using temperatures from ambient to elevated levels.

45. (cancelled)

46. (cancelled)

47. (cancelled)

48. (previously presented) The method of claim 1 wherein the organic solution comprises less than 5% water by volume.

49. (currently amended) The method of claim 1 wherein the organic solution comprises ~~most~~ preferably less than 0.25% water by volume.

50. (currently amended) The method of claim 1 further comprising removing a surface coating of a barrier layer.

51. (previously presented) The deposition method of claim 1 wherein the depositing of the desired deposition component comprises displacing components from a layer of the active substrate with the desired deposition component.

52. (cancelled)

53. (currently amended) The method of claim 14 wherein the surface coating of the barrier layer comprises at least one material selected from the group consisting of an oxide and a nitride ~~a metal nitride, a metal silicate, a metal combination and a non-metal combination.~~

54. (cancelled)

55. (previously presented) The method of claim 1 wherein galvanic coating comprises separate galvanic coating comprising:

loading the organic solution with the deposition component; and
reactively reducing in the organic solution.

56. (cancelled)

57. (cancelled)

58. (previously presented) The method of claim 1 wherein the desired deposition component comprises a metal ion.

59. (cancelled)

60. (new) The method of claim 1 wherein the desired deposition galvanic coating component comprises at least one material selected from the group consisting of an ion, and a neutral molecule.

61. (new) The method of claim 1 wherein the composition of the seed particle comprises at least one non-metallic element.

62. (new) The method of claim 15 wherein the treating step comprises introducing at least one material selected from the group consisting of an acid and a base into the organic solution.

63. (new) The method of claim 15 wherein the step of treating the deposition substrate comprises etching the substrate.

64. (new) The method of claim 63 wherein the step of etching the substrate comprises pre-etching the substrate prior to the deposition step.
65. (new) The method of claim 63 wherein the step of etching the substrate comprises *in-situ* etching of the substrate during the deposition step.
66. (new) The method of claim 1 wherein the organic solution is a single phase solution.
67. (new) The method of claim 1 further comprising the step of mixing or agitating the organic solution.
68. (new) The method of claim 67 wherein the mixing comprises ultrasonic agitation.
69. (new) The method of claim 1 further comprising the step of adding at least one additive in the organic solution.
70. (new) The method of claim 69 wherein the additive comprises at least one member selected from the group consisting of organics, inorganics, acids, bases, salts, and mixtures thereof.
71. (new) The method of claim 70 wherein the organic additive comprises at least one component selected from the group consisting of alcohols, alkyl halides, ethers, carboxylic acids, aldehydes, ketones, amines, carbanions, phenols, amino acids, proteins, carbohydrates, sulfonated organics, and mixtures thereof.
72. (new) The method of claim 70 wherein the inorganic additive comprises at least one component selected from the group consisting of water, acids, bases, activating cations, activating anions, and mixtures thereof.

- 73. (new) The method of claim 1 further comprising the step of transporting reacting species.
- 74. (new) The method of claim 1 further comprising the step of elevating the pressure.